New Journal of Physics 2005 vol.7

Diffusion processes and memory effects

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Abstract

We report the results of the numerical estimation of statistical memory effects in diffusion for two various systems: Lennard-Jones fluids and the model of the Brownian particle in a one-dimensional harmonic lattice. We have found the relation between the diffusion coefficient and the non-Markovity parameter, which is linear for the Lennard-Jones systems in liquid state. The relation between the memory measure and the excess entropy is also discussed here. © IOP Publishing Ltd and Deutsche Physikalische Gesellschaft.

http://dx.doi.org/10.1088/1367-2630/7/1/009